

CALCIUM DOPED POLYSILICON GATE ELECTRODES

ABSTRACT OF THE DISCLOSURE

A calcium doped polysilicon gate electrodes for PMOS containing semiconductor devices. The calcium doped PMOS gate electrodes reduce migration of the boron dopant out of the gate electrode, through the gate dielectric and into the substrate thereby reducing the boron penetration problem increasingly encountered with smaller device size regimes and their thinner gate dielectrics. Calcium doping of the gate electrode may be achieved by a variety of techniques. It is further believed that the calcium doping may improve the boron dopant activation in the gate electrode, thereby further improving performance.